

REMARKS

Claims 1 through 6, 8, 9, 11 through 13, 15 and 17 through 20 are pending in this Application, of which claims 17 through 20 stand withdrawn from consideration pursuant to the provisions of 37 C.F.R. § 1.142(b). Applicants acknowledge, with appreciation, the Examiner's allowance of claims 11 through 13 and 15, and the Examiner's indication that claims 8 and 9 contain allowable subject matter. Accordingly, the only remaining issue pivots about the patentability of claims 1 through 7.

Claim 1 has been amended and claim 7 cancelled. Care has been exercised to avoid the introduction of new matter. Indeed, adequate descriptive support for the present Amendment should be apparent throughout the originally filed disclosure noting, for example, original claim 8. Applicants submit that the present Amendment does not generate any new matter issue.

Claims 1 through 3 and 7 were rejected under 35 U.S.C. § 102 for lack of novelty as evidenced by Agarwala et al.

In the statement of the rejection the Examiner adhered to the position that Agarwala et al. disclose a method corresponding to that claimed, including depositing an adhesion promoter identified as element 30 (Fig. 3E). This rejection is traversed.

In accordance with the method defined in independent claim 1, a swelling agent is deposited to line the sidewalls and then heated to swell the porous dielectric material. As apparently recognized by the Examiner, no such method is disclosed or suggested by Agarwala et al.

The above argued difference in manipulative steps between the claimed method and the method disclosed by Agarwala et al. undermine the factual determination that Agarwala et al. disclose a method identically corresponding to that claimed. *Minnesota Mining &*

Manufacturing Co. v. Johnson & Johnson Orthopaedics Inc., 976 F.2d 1559, 24 USPQ2d 1321 (Fed. Cir. 1992); *Kloster Speedsteel AB v. Crucible Inc.*, 793 F.2d 1565, 230 USPQ 81 (Fed. Cir. 1986). Applicants, therefore, submit that the imposed rejection of claims 1 through 3 and 7 under 35 U.S.C. § 102 for lack of novelty as evidenced by Agarwala et al. is not factually viable and, hence, solicit withdrawal thereof.

Claims 4 through 6 were rejected under 35 U.S.C. § 103 for obviousness predicated upon Agarwal et al.

In the statement of the rejection the Examiner concluded, without providing any factual evidence, that one having ordinary skill in the art would have been motivated to optimize the thickness of the swelling agent, adhesion promoter, or layer of dielectric material to arrive at a thickness substantially equal to the largest dimension of the exposed pores as recited in independent claim 4. This rejection is traversed.

The Court of Appeals for the Federal Circuit held that, regardless of the source of the motivation, the Examiner **must** provide a **factual** basis and **explain why** a claimed invention would have been obvious to one having ordinary skill in the art. *Teleflex Inc. v. Ficosa North America Corp.*, 299 F.3d 1313, 63 USPQ2d 1374. Instead, the Examiner here simply relied upon **generalizations** which do not apply to the facts of this case. *Ecolochem Inc. v. Southern California Edison, Co.*, 227 F.3d 1361, 56 USPQ2d 1065 (Fed. Cir. 2000); *In re Rouffet*, 149 F.3d 1350, 47 USPQ2d 1453 (Fed. Cir. 1998). That the Examiner has relied upon a generalization is conspicuous by the absence of any hint in Agarwala et al. of linking the thickness of layer 30 to the largest dimension of an exposed pore. In fact, the problem of exposed pores is not even a blip on the radar screen of Agarwala et al.

Under the circumstances of this case it should be apparent that the Examiner's reliance upon the optimization rubric is misplaced. As repeatedly judicially held, in order for the Examiner to rely upon an optimization theory, the applied prior art must, as a factual matter, disclose that the asserted variable is, indeed, an art-recognized result effective variable. *In re Rijckaert*, 9 F.3d 1531, 28 USPQ2d 1955 (Fed. Cir. 1993); *In re Yates*, 663 F.2d 1054, 211 USPQ 1149 (CCPA 1981); *In re Antonie*, 559 F.2d 618, 195 USPQ 6 (CCPA 1977).

Based upon the foregoing it should be apparent that **Agarwala et al. neither disclose or suggest that the relationship between the thickness of layer 30 and the largest dimension of an exposed pore is an art-recognized result effective variable.** Indeed, Agarwal et al. are not even concerned with exposed pores. This being the case, it is factually and legally erroneous to conclude that one having ordinary skill in the art would somehow have optimized the thickness of layer 30 so that it is equal to a largest dimension of the exposed pores. Indeed, in accordance with column 6 of Agarwala et al., line 47, layer 30 is deposited at a thickness of 150 nm (1500 Å); whereas, dielectric layer 40 deposited in accordance with the present invention may range from a thickness of 10 Å to 300 Å (paragraph [27] of the written description of the specification). It is difficult to envision an exposed pore of 1500 Å in a sidewall of a functionally useful semiconductor device.


Based upon the foregoing it should be apparent that one having ordinary skill in the art would not have found the subject matter of claims 4 through 6 as a whole obvious within the meaning of 35 U.S.C. § 103. Applicants, therefore, submit that the imposed rejection of claims 4 through 6 under 35 U.S.C. § 103 for obviousness predicated upon Agarwala et al. is not factually or legally viable and, hence, solicit withdrawal thereof.

Applicants again acknowledge, with appreciation, the Examiner's allowance of claims 11 through 13 and 15, and the Examiner's indication that claims 8 and 9 contain allowable subject matter. Based upon the arguments submitted *supra*, it should be apparent that the imposed rejections have been overcome and that all pending claims are in condition for immediate allowance. Favorable consideration is, therefore, solicited.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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